



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,037	03/16/2004	Hiroshi Matoba	8001-1179	1264
466 7590 07/05/2007 YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			EXAMINER LIE, ANGELA M	
			ART UNIT 2163	PAPER NUMBER
			MAIL DATE 07/05/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/801,037	Applicant(s) MATOBA ET AL.	
	Examiner Angela M. Lie	Art Unit 2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-20 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/24/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 1, 14 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claims 1, 14 and 20 recite the limitation "control unit" in lines 15 and 19. There is insufficient antecedent basis for this limitation in the claim. The applicant fails to clearly identify if there is one control unit shared by storage components, or if there are multiple control units. If there are multiple control units, the applicant is suggested to use terms such as first and second control units.
4. For the purposes of the examination the examiner interprets current limitations regarding control unit present in the independent claims as having one control unit shared by the multiple storage components.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 14, 15 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Shinmura et al (US Patent No. 5193171).

As to claims 1, 14 and 20, Shinmura discloses storage system connected to at least one second storage component via a network (Figure 1, connection to the data processing device), the first storage component (Figure 1, element 9): comprising: a recording unit that records at least one content (Figure 1, element 11); a control unit (Figure 1, element 7) associated with the recording unit, the control unit generating first data registering storage capacity in use by each user of the associated recording unit (Figure 2B); an interface to the second storage component for receiving second data generated by a control unit of the second storage component and registering storage capacity in use by each user of a recording unit of the second storage component (wherein there must be an interface allowing recording unit to gather information from control unit, in order to fill out needed entries in the management table, and wherein the interface is interpreted as a common language through which control unit and recording unit can communicate); and a management table (Figure 2B) that has a first management item (Figure 2B, elements 13i and 13j) and a second management item (Figure 2B, elements 13f and 13g), the first management item comprising i) the first data generated by the control unit (Figure 1, element 7, wherein control unit gathers information from the respective storage components) registering the storage capacity in use (Figure 2B, elements 13i and 13j)) by each user (Figure 2B, element 13a) of the recording unit of the first storage component (Figure 2B, element 13b), and ii) the second data generated by the control unit (Figure 1, element 7) of the second storage

Art Unit: 2163

component (Figure 1, element 10) registering storage capacity in use by each user of the recording unit of the second storage component (Figure 1, element 7), and the second management item for managing (Figure 2B, elements 13d), for each user (13a), total storage capacity that each user is allowed to use (Figure 2B, element 13e) in the recording units of the first and second storage components, wherein, the control unit restricts the storage capacity in use by the users based on the management table so that the storage capacity of the recording unit used by a user does not exceed the total storage capacity that the user is allowed to use (column 5, lines 42-46).

As to claims 2 and 15, Shinmura discloses storage component wherein the control unit acquires data of the management table of the own storage component independently from other storage components, and updates the data of the management table based on the acquired data (Figure 1, elements 9 and 10).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 3-6, 9-13 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinmura (US Patent 5193171) in the view of Kanai et al (US Publication 2002/0152181).**

As to claims 3 and 16, Shinmura teaches all the limitations disclosed in claims 2 and 15, however he does not explicitly teach that a use status of the recording unit of the own storage component is changed in accordance with recording or deletion of contents, and control unit updating data of the own storage component among data of the first management item in the management table of the own storage component. Kanai teaches a storage system wherein the data can be recorded or deleted from the recording unit (paragraph 195) and wherein the status about the current condition is updated (paragraphs 216 and 246). It would have been obvious to one of the ordinary skill in the art during the time the invention was made to enable deleting or recording data, and further updating management information, as taught by Kanai, in Shinmura's space management apparatus, because this allow the user to have greater flexibility, i.e. there might be times when user does not need old data and would rather replace it with current information.

As to claims 4 and 17, Shinmura teaches storage system wherein the control unit transmits at least on of periodically and at predetermined timing, packets describing the data of the first management item in the management table of the own storage component to other storage components via the network, and updates, in accordance with data of the first management item in the management table of another storage component that is described in packets received from the other storage component via the network, data of the other storage component among the data of the first management item in the management table of the own storage component (column 6, lines 44-49).

As to claims 5 and 18, Shinmura teaches storage system, wherein the control unit transmits, among the data of the first management item in the management table of the own storage component, packets describing only (if there is more than one storage media, it is just a matter of the design choice to decide if certain data should include information about one (own) or more data storages (other)) the data of the own storage component, to other storage components via the network (column 5, lines 16-27, since the memory pools form multiple sets i.e. active and inactive pools, and those are peripheral elements, so one of them can be considered own and the other one can be considered "other").

As to claims 6 and 19, Shinmura teaches storage system, wherein the control unit transmits, among the data of the first management item in the management table of the own storage component, packets describing data of all the storage components registered in the first management item, to other storage components via the network (column 5, lines 16-27, since the memory pools form multiple sets i.e. active and inactive pools, and those are peripheral elements, so one of them can be considered own and the other one can be considered "other").

As to claim 9, Kanai further teaches storage system wherein when at least one of registration, modification and deletion of the total storage capacity a user is allowed to use is performed, the control unit updates data of the user among data of the second management item in the management table of the own storage component (paragraphs 195, 216 and 246).

As to claim 10, Sinmura teaches storage management, however he does not specifically point out that the user can select the storage size, so that the selected capacity is not exceeded. Kanai teaches storage system wherein when at least one of registration and modification of the total storage capacity a user is allowed to use is performed at the own storage component, the control unit makes user select the total storage capacity the user is allowed to use within an extent not exceeding a recommended default value. It would have been obvious to one of the ordinary skill in the art during the time the invention was made to allow a user to select their preferred storage capacity and then not allowing them to exceed it, as taught by Kanai, and use it in Sinmura's storage management unit because this would allow to keep track of everyone's storage capacity, which in fact would improve and simplify storage management (i.e. with everybody having designated storage capacity, it would be known how much space is needed for everyone).

As to claim 11, Sinmura teaches storage system wherein the control unit does not allocate the total storage capacity in all the recording unit of the plurality of storage components as the total storage capacity each user is allowed to use so that a part of the total storage capacity in all the recording unit remains unoccupied (column 2, lines 32-39, wherein spare volumes are empty unless there the required space for the file movement is insufficient).

As to claim 12, Sinmura teaches storage system wherein the control unit transmits at least one of periodically and at predetermined timing (Figure 4, step 50, when migration takes place), packets describing the data of the second management

Art Unit: 2163

item in the management table of the own storage component to other storage components via the network, and updates (Figure 4, updating space management table), in accordance with data of the second management item in the management table of another storage component that is described in the packets received from the other storage component via the network (wherein the network is considered as connection between the storage elements), data of a user whose total usable storage capacity is registered, modified, or deleted in the other storage component (wherein migration of files modifies the amount of the storage space) among the data of the second management item in the management table of the own storage component (wherein active pool can be considered as own storage and inactive pool the "other" storage).

As to claim 13, Sinmura teaches storage component wherein the management table is divided to a first management table having the first management item and a second management table having the second management item (Figure 2A, the management tables for pool A and pool B, i.e. capacity and usage capacity).

Allowable Subject Matter

9. Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

As to claim 7, the prior art fails to teach storage system wherein packets describing the data of the first management item in the management table of another storage component are not received for a predetermined period of time, the control unit transmits packets for turning on a power of another storage component thereto via the network.

As to claim 8, this claim would be allowable by the virtue of its dependency on claim 7.

Response to Arguments

11. Applicant's arguments filed March 29, 2007 have been fully considered but they are not persuasive.

12. With respect to the applicant's assertion on page 17, stating that neither Shinmura nor Kanai teaches plural storage components, with each storage component having the recited management table comprised of the recited first management item and second management item, the examiner disagrees. First of all, there is no requirement that each of the storage component has to have separate management table, therefore a single management table used for multiple storage component reads on the current limitation regarding management table.

13. Furthermore, the applicant did identify storage components as physically independent storage devices instead the applicant discloses storage component which could be interpreted as storage portions, because the term "component" according the Encarta dictionary second edition is a part of something. Figure 1 in the Shinmura's

Art Unit: 2163

reference, shows at least two storage devices (i.e. active and inactive pools), because on top of two separate pools, volumes could also be considered as separate storage components since they form separate partitions.

14. With respect to the applicant's assertion on page 18, stating that Shinmura does not teach the generation of data and then sending data to the other storage components for inclusion in each storage component's management table, the examiner disagrees.

It is important to note that in order to identify used space in the storage components, the control unit has to receive some data indicating used storage capacity, furthermore, the applicant does not require multiple management tables instead each of the storage components could point to the shared management table according to the current claim language. If the applicant wishes to identify multiple management tables, so that each storage component has its own, individual management table, the applicant has to clearly disclose it in the body of the claim. The claim language should be read according its broadest, reasonable interpretation and there should be no uncertainty with respect to the scope of the claimed invention.

The Prior Art

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Chujo et al (US Publication 2002/0023156) teaches memory storage management.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

17. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiry

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela M. Lie whose telephone number is 571-272-8445. The examiner can normally be reached on M-F.

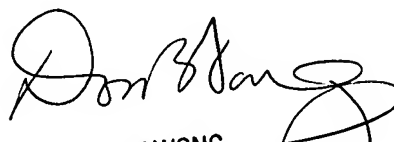
19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2163

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Angela M Lie



DON WONG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100